

Attorney Docket No. P66334US0
Serial No.: 09/744,752

Amendments to the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claims 1-19 (cancelled).

20. (New) A process for the utilization of a fuel having an initial boiling temperature or prevailing initial boiling temperature range at 1 bar of between 231-830 °K, characterized in that:

- (a) the fuel is contacted with at least one oxidant preheated to from at a pressure, p , of ≥ 1 bar or at a lower pressure with a reduction of the temperature range, and a C/O molar ratio of between 1:0.14 and 1:25 in a reaction chamber to initiate exothermic prereactions in the form of a cool flame which cause only partial conversion of the fuel and oxidant even when the fuel and oxidant are homogeneously mixed; and
- (b) a kinetic reaction inhibition of the further reaction of the oxidizable mixture formed in the cool flame is provided by adjusting the technically relevant residence time t_r of the mixture prepared in step (a) in the reaction chamber of $t_r > 25$ ms at $p \leq 1$ bar, and residence times which become shorter when the pressure is increased under otherwise equal conditions, and a limited heat dissipation from the reaction zone through an inert gas stream with a ratio of the heat capacity flow of the oxidant, $\dot{M}_o \cdot c_p$, to the product of fuel mass flow, \dot{M}_f , and heating value, H_u , which is, in the adiabatic reaction space, $\dot{M}_o \cdot c_p / \dot{M}_f \cdot H_u > 2 \cdot 10^{-4} \text{ K}^{-1}$ and/or through the reactor

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wall with a heat flow density, \dot{q} , of $\dot{q} < 85 \text{ kW/m}^2$, whereby auto-ignition of the

mixture is prevented, especially for a predictable period of time.

21. (New) The process according to claim 20, wherein said fuel is selected from hydrocarbons and mixtures of hydrocarbons with non-hydrocarbons in the form of emulsions and/or suspensions with liquids substantially insoluble in hydrocarbon, especially water in admixture with ammonia, hydrogen sulfide and/or alkanols.
22. (New) The process according to claim 21, wherein said oxidant is oxygen, ozone, air, exhaust gases from superstoichiometric combustion, an oxygen-containing compound, such as a compound containing peroxides, sulfur oxides, nitrogen oxides (N_2O or NO_x).
23. (New) The process according to at least one of claim 20, further characterization in that at least partial vaporation of the product from step (b) is achieved by cooling.
24. (New) The process according to claim 20, wherein the mixture from step (b) is further at least partially recirculated into a system of step (a).
25. (New) The process according to claim 20, wherein the starting temperature of the exothermic prereactions is lowered by a pressure reduction of the mixture of oxidant and

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fuel, by recirculation of at least part of the mixture of step (b), and/or by the addition of a catalyst.

26. (New) The process according to claim 25, wherein the energy necessary for initiating the reactions of step (a) is obtained from the exothermic prereaction according to step (a) and/or by introducing energy from a downstream process.
27. (New) The process according to claim 20, wherein the mixture of step (b) will condense at a lower temperature range than that corresponding to the initial boiling temperature range of the fuel.
28. (New) The process according to claim 20 utilized for the processing and/or refining of fuels, especially in refining plants, in synthesis gas production, protective gas production, for the provision of gaseous fuels for fuel cells, for combustion in combustion engines and/or firing plants, for the separation of product streams from accompanying substances.
29. (New) The process according to claim 20 for providing of at least partially vaporized fuels for driving mobile devices, such as vehicles.
30. (New) The process according to claim 20 for providing of at least partially vaporized fuels for use in immobile devices, such as devices for the generation of mechanical or electric power and/or heat.

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31. (New) The process according to claim 28, wherein air and/or oxygen is preferably used as the oxidant, and the educts from step (a) are supplied substoichiometrically, preferably at an air ratio of $\lambda = 0.2$ to 0.7 .
32. (New) The process according to claim 21, wherein an additional product stream essentially consisting of said fuels or non-hydrocarbons, especially materials containing water, is supplied to step (b).
33. (New) The process for the processing and/or refining of fuels according to claim 28, wherein the product obtained from step (b) is converted to a fuel gas suitable for fuel cells, such as hydrogen, carbon monoxide and/or short-chained hydrocarbons, by technically known process steps, preferably partial oxidation, steam reforming and/or shift conversion (water-gas reaction).
34. (New) The process according to claim 28, wherein said fuel cell is a membrane fuel cell (PEMFC).
35. (New) The process according to claim 28, wherein the mixture from step (b) is subjected, at least partially, to an increase in pressure.
36. (New) The process according to claim 20, wherein the mixture from step (b) is further subjected, at least partially, to a separation process, preferably a thermal separation process.